

## ABSTRACT OF THE DISCLOSURE

The present invention includes field effect transistors, field emission apparatuses, thin film transistors, and methods of forming field effect transistors. According to one embodiment, a field effect transistor includes a semiconductive layer configured to form a channel region; a pair of spaced conductively doped semiconductive regions in electrical connection with the channel region of the semiconductive layer; a gate intermediate the semiconductive regions; and a gate dielectric layer intermediate the semiconductive layer and the gate, the gate dielectric layer being configured to align the gate with the channel region of the semiconductive layer. In one aspect, chemical-mechanical polishing self-aligns the gate with the channel region. According to another aspect, a field emission device includes a transistor configured to control the emission of electrons from an emitter.